



IC-F7010 Series
IC-F7020 Series

VHF AND UHF P25 DIGITAL TRANSCEIVERS

P25 Conventional and Phase 1/2 Trunking Smallest and Lightest of Its Class

The IC-F7010 series is a small and lightweight P25-compliant radio and can be upgraded to Phase 1 trunking and Phase 2 trunking with a license key. The radio offers uncompromising durability and IP68 submersible protection with ease of use operation and high visibility color LCD. Plus the GPS receiver, Bluetooth® capability and microSD card slot come standard.

| P25 Phase 1 conventional, trunking* and Phase 2 trunking* capable

| DHS P25 CAP certified (TIA-102) compliant for multiple vendor interoperability

| Optional FIPS compliant AES encryption unit*

| P25 voting scan* (P25 conventional mode)

| Up to 1024 channel capacity with 128 zones

| IP68 waterproof protection (1 m depth/1 hour)

| High visibility and readability with color LCD

| Icom's custom high power handling capacity speaker for 1300 mW of powerful audio

| Built-in Bluetooth®, voice recording and P25 packet data (GPS)* functions

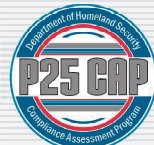
| Enhanced dual-rate AMBE+2™ vocoder

* License key upgrade required



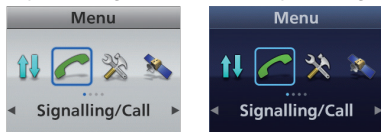
IC-F7010T

IC-F7020S



General Features

- 136–174, 380–470, 450–512, 450–520 MHz versions
- 1024 channels / 128 zones
- High resolution color LCD and intuitive user interface
- Day and night mode display settings



Day and night mode example

- Functions and menu items can be set in a language other than English (For example French, Spanish, Russian, and Traditional Chinese)
- 16-position rotary selector and ON/OFF volume knob
- Quick A/B switch on the top panel programmable for various functions such as zone, scrambler/encryption, etc.
- 1300 mW loud and intelligible internal speaker audio
- MIL-STD-810 G such as shock, vibration and temperature
- IP68, one meter depth for one hour waterproof and dust-tight protection
- 38.2 mm (1.5 inch) slim dimensions (With BP-284 battery pack)
- Battery information display
- Flat sheet keypad offers large button space and protects the radio from dust
- Front panel programming option (ISL-P25FP License key required)
- Fast resume time wake up from the power save mode
- DTMF autodial

Operating Mode

- P25 Phase 1 conventional
- P25 Phase 1 trunking (ISL-P25TR License key required)
- P25 Phase 2 trunking (ISL-P25P2 and ISL-P25TR License keys required)
- Analog mode
- Analog/digital mixed operation

Digital Functions (Voice and Data)

- Over-the-Air Programming (OTAP) function (Conventional only) (CS-OTPM2 manager software required)
- Individual, group call
- Unit ID and talkgroup display on receive
- Status update and status query
- Short data message (Up to 100 characters)
- GPS position and transparent data transmission (ISL-P25DS License key required)
- Call alert
- Phone number list
- Call log

Analog Functions

- CTCSS and DTCS tone
- 2-Tone
- MDC functions

Security and Safety

- Optional UT-125FIPS FIPS compliant AES/DES encryption unit and UT-134 non-FIPS AES/DES unit (ISL-P25AES License key required for AES encryption)
- Over-the-Air Rekeying (OTAR)
- Analog inversion voice scrambler (16-codes)
- Power ON password
- Tactical group temporarily regroup user groups
- Radio stun/kill/revive
- Remote monitor • Radio check
- Emergency key for emergency call
- Man down function • Lone worker function
- Motion/stationary detection
- Advanced System Key (ASK) protects the radio from unauthorized programming

Scan Functions

- Priority scan • Talkgroup scan
- Voting scan for automatically selecting optimal repeater site (ISL-P25VS License key required)

Voice/Audio Functions

- Voice announcement (Channel number and zone)
- VOX function for hands-free operation
- Voice recording/playback is saved to a microSD card (Up to 500 hours with a 32 GB card) (User supplied)
- TX/RX active noise canceller
- TX/RX audio equalizer (Flat, high/mid/low boost, low cut)
- AF volume equalizing function adds high-pass filter to provide clear, intelligible audio, when increases the volume
- Adjustable analog and digital volume level

Hardware Features

- Programmable vibration alert and ringer beep
- Built-in Bluetooth® for wireless audio and data
- Third-party wireless Bluetooth® headset (Like a 3M™ Peltor™ WS™ 5) can be used
- Wireless radio programming over Bluetooth®
- USB connector for data transfer mode or card reader mode
- 14-pin accessory connector
- Built-in GPS with GPS position screen
- Internal clock with time auto adjustment
- Optional BC-225 intelligent charger and RS-BC225 reader software for BC-225 for battery life cycle management

| | | IC-F7010T/S | IC-F7020T/S |
|--|----------------------|--|--|
| GENERAL | | | |
| Frequency coverage (* Depending on the version) | | 136–174 MHz | 380–470, 450–512, 450–520 MHz |
| Number of channels | | 1024 channels /128 zones | |
| Type of emission (* Depending on the version) | | 16K0F3E*1, 11K0F3E, 8K50F3E, 8K10F1E/F1D, 8K10F1W | |
| Power supply requirement | | 7.5 V DC nominal | |
| Current drain (approx.) | TX | 1.5 A | 1.8 A |
| | RX | 560 mA /150 mA (Max. audio (internal SP)/Standby) | |
| Antenna impedance | | 50 Ω | |
| Operating temperature range | | –30 °C to +60 °C; –22 °F to +140 °F (Radio specifications) | |
| Dimensions (W × H × D; Projections not included) | | 53.6 × 123.5 × 38.2 mm; 2.1 × 4.9 × 1.5 in (With BP-284) | |
| Weight (approx.) | | 180 g; 6.4 oz (main unit) | |
| | | 355 g; 12.5 oz (BP-284, MB-133, FA-S81VS) | 355 g; 12.5 oz (BP-284, MB-133, FA-S81US) |
| TRANSMITTER | | | |
| Output power (Hi, L2, L1) | | 5 W, 2 W, 1 W | |
| Maximum frequency deviation | | ±5.0 kHz (@25 kHz), ±2.5 kHz (@12.5 kHz) | |
| Frequency stability | | ±1.0 ppm | |
| Spurious emissions | | 80 dB typ. | |
| FM hum and noise | | 55 dB typ. (@25 kHz), 55 dB typ. (@12.5 kHz) | |
| Audio harmonic distortion | | 0.5% typ. (AF 1kHz 40% deviation) | |
| FSK error | | 1% typ. (C4FM), 3% typ. (H-CPM) | |
| RECEIVER | | | |
| Sensitivity | Analog (12 dB SINAD) | 0.22 μV typ. (@25/12.5 kHz) | 0.23 μV typ. (@25/12.5 kHz) |
| | Digital (5% BER) | 0.22 μV typ. (@C4FM, H-DQPSK) | 0.23 μV typ. (@C4FM, H-DQPSK) |
| Adjacent channel selectivity | Analog | 80/57 dB typ. (@25/12.5 kHz, TIA-603B), 80/76 dB typ. (@25/12.5 kHz, TIA-603) | 75/55 dB typ. (@25/12.5 kHz, TIA-603B), 75/72 dB typ. (@25/12.5 kHz, TIA-603) |
| | Digital | 63 dB typ. (@C4FM, H-DQPSK, TIA-102) | 60 dB typ. (@C4FM, H-DQPSK, TIA-102) |
| Spurious response rejection | | 80 dB typ. | 76 dB typ. |
| Intermodulation rejection | Analog | 75 dB typ. | 74 dB typ. |
| | Digital | 75 dB typ. | 74 dB typ. |
| Audio output power | Internal SP | 1300 mW typ. (at 5% distortion with 8 Ω load) | |
| | External SP | 1000 mW typ. (at 5% distortion with 8 Ω load) | |

Measurements made in accordance with TIA-102 (P25), TIA-603 (FM Wide/narrow).

All stated specifications are subject to change without notice or obligation.

*1 ISL-P25W required for 25 kHz bandwidth operation for the USA versions.

Applicable U.S. Military Specifications & IP Rating

| Standard | MIL 810G | |
|-------------------|----------|-----------|
| | Method | Procedure |
| Low Pressure | 500.5 | I, II |
| High Temperature | 501.5 | I, II |
| Low Temperature | 502.5 | I, II |
| Temperature Shock | 503.5 | I-C |
| Solar Radiation | 505.5 | I |
| Rain Blowing/Drip | 506.5 | I, III |
| Humidity | 507.5 | II |
| Salt Fog | 509.5 | – |
| Dust Blowing | 510.5 | I |
| Immersion | 512.5 | I |
| Vibration | 514.6 | I |
| Shock | 516.6 | I, IV |

Also meets equivalent MIL-STD-810-C, -D, -E and -F.

| Ingress Protection Standard | |
|-----------------------------|---|
| Dust & Water | IP68 (Dust-tight and waterproof protection) |

Battery Life

| Battery pack | Type | Capacity | Operating time* (Approx.) |
|--------------|---------------------|----------------------------------|---------------------------|
| BP-283 | Rechargeable Li-ion | 2010 mAh (typ.), 1910 mAh (min.) | 9 hours (VHF) |
| BP-284 | Rechargeable Li-ion | 3210 mAh (typ.), 3070 mAh (min.) | 14 hours (VHF) |

* Tx: Rx: standby = 5:5:90 duty cycle.

Supplied accessories: (May differ depending on the version)

• Battery pack, BP-284 • Belt clip, MB-133

